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NATHANIEL WALLICH (1786—1854) AND HIS CONTRIBUTIONS TO THE BOTANY OF INDIA AND NEIGHBOURING COUNTRIES

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ABSTRACT

A brief review of the life of Nathaniel Wallich (1786-1854) is presented. The contribution of Wallich and his efforts to bring to light the Flora of India and neighbouring countries are focused. The publications of Wallich are enumerated and sometimes with annotations as a guide to their contents. Some selected references on Wallich are also appended.

The botanical studies in Asia, particularly in India, dates back to 1784, when Sir William Jones founded the Asiatic Society of Bengal to study Man and Nature in Asia with special reference to Oriental Learning, Arts and Natural History. The botanical activity actually started in 1787, when Robert Kyd established the Botanic Garden at Sibpur, Howrah, near Calcutta. Since its foundation, the Botanic Garden at Calcutta played a distinct role in the introduction, naturalisation and development of jute, teak, mahogony, sugar-cane, tea and cinchona cultivation in India (Santapau, 1958 ; Azad, 1967). Roxburgh's fascination for the plant wealth of Indian subcontinent, especially south-east Asia since 1793 onwards, attracted several plant collectors, and many botanists of his time came forward to provide him with unidentified specimens of plants and in return, used to receive rare and interesting specimens of tropical plants. The plant wealth of India and of adjoining countries from early historic times has attracted the western nations. Before the British East India Company properly settled in India, several other foreign powers were in possession of settlements in different corners of India. The Danish settlements at Tranquebar and Serampore were such pockets within the British regime. In India, apart from pre-linnean accounts of Garcia d' Orta (1565-Latin summary by Clusius, 1567 : *see* Santapau, 1958) and of van Rheede's 'Hortus Indicus Malabaricus' (1678-1703), several European East India Companies of the 17th and 18th centuries became interested in the commercial plant produces. Their commercial interest and hobby for collecting plants of local uses helped in the gradual development of the Calcutta Garden of the British East India Company, particularly as the central bureau of plant introduction and exchange and as the centre of taxonomic research in India and neighbouring countries. Inspired by J. G. Koenig, a direct pupil of Linnaeus working at Tranquebar, a Danish settlement near Madras (Stewart, 1982), William Roxburgh initiated the systematic studies in India and made the Garden of Calcutta known to scientists abroad through his regular correspondences and exchanges.

Soon after the departure of Roxburgh to London, Dr. William Carey, a British Mis-

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sionary of Serampore officiated as in-charge of the Calcutta Garden between 1813 and 1814, when Dr. Francis (Buchanan) Hamilton took full charge of the Garden for a short tenure between 5th November 1814 and 10th February, 1815. Dr. Nathaniel Wallich temporarily relieved him on 24th February, 1815. While expecting a permanent order of appointment, Wallich was directed to hand over his charge to James Hare on 20th April, 1816, who was again replaced by Dr. T. Casey on 7th December, 1816. Ultimately, Wallich was reinstated on 1st August, 1817 permanently by the Court of Directors of the East India Company on the recommendations of Sir J. Banks, Dr. J. Fleming, President of Bengal Medical Service and T. H. Colebrooke (Prain, 1905, Anon., 1913).

In Nathaniel Wallich, the working spirit of William Roxburgh prevailed upon. Initially, Dr. Wallich was an Assistant Surgeon to the Danish Settlement at Serampore and thereafter was in the East India Company's Medical Service as a professor of the Medical College at Calcutta. He later became botanist of much prominence and became well-known for his extensive collections and scientific attainments.

As the year 1986 marked the 200 birth anniversary of Nathaniel Wallich, it appears to be an appropriate occasion for putting together on record the scattered, published accounts as much as now available or can be traced on the activities of Wallich in India and neighbouring countries. with special reference to Calcutta Garden and to specimens of his Numerical List (Bennett, 1855; de Candolle & Smith, 1981 and others).

Nathaniel (Nathanael) Wallich was born at Copenhagen, Denmark on 28th January, 1786. From his search and recent findings, Dr. Olaf Olsen, Director, Nationalmusset, Denmark, doubts about the year of birth of N. Wallich and states it to be as 1785 (?). He, however, at present cannot produce any evidence in support of his statement. His real (Jewish ?) name has been variously cited, such as 'Nathan Wallich', 'Nathan Wulff' ('Wolff'), 'forhen Nathan Wulff (Wolff)' or 'Oliver Nathan Wolff'. His father, Lazarus Wallich Wulff was a Jewish merchant. His family of Jewish extraction, although not rich and educated, managed to give him liberal education for a bright career. In between 1801 and 1802 Wallich made the preliminary examination and he became a student under the Professor Martin Vahl at the University of Copenhagen. He studied veterinary medicine, medicine and botany and in the year 1806, qualified as a licentiate of the Royal Academy of Surgeons in Copenhagen. He was appointed in the Danish East India Company on 31st October 1806. He sailed for India in April 1807, arrived at Serampore (Fredericksnagore) in Bengal towards the end of November 1807 (Bennett, *l.c.* Crawford, 1930; Warming, 1880-1881; Christensen, 1924-1926) to ply on his profession as an attache to the Danish Settlement in Serampore and served there up to the year 1808.

Immediately following his arrival in Bengal, Wallich was introduced to Roxburgh, the then Superintendent of the Calcutta Botanic Garden by William Carey. Roxburgh and Wallich, became closely associated because of their common botanical persuit. The exchange of letters between Roxburgh and Wallich fully testifies the close friendship of Roxburgh towards Wallich as well as Carey. About 15 such selected letters with annotations, issued between the years 1808 and 1812, were published by Nayar & Das (1983). Later, Wallich repeatedly acknowledged Carey's services and whenever in doubts, he used to consult Carey to confirm his botanical identifications (Pl. Asiat. Rar. : Wallich). Carey's letters to Wallich as Danish Surgeon at Serampore are indexed with dates in Wallich's ledger of his correspondences and were indeed instructive ones to the latter (Ghosh, 1947, Srinivasan, 1961).

In 1820, under Carey's guidance, the Agri-Horticultural Society of India was established with Dr. N. Wallich as its secretary (Bennett, *l.c.*; de Candolle & Smith, *l.c.*).

Wallich became a prisoner of war in 1808 only for a short period, when the Danish settlement at Serampore was captured by the British forces of the East India Company; but Wallich was released soon on the merit of his scholarship and scientific aptitude through the influence and efforts of W. Roxburgh and because of the close relationship and intimacy between the British and Danish high officials. Thereafter, Wallich went to live with Roxburgh in 1809, and was appointed to assist him without any 'additional allowances' [Public letter from E.I.C. in Calcutta dated 30th June (July ?) 1809, para 210 : Crawford, 1914 and 1930]. As no letter of appointment was received, Wallich went back to Serampore to start again his medical practice. But his ill health rather forced him to go to Mauritius in 1812, where he stayed for a few months for recovery. He collected few botanical specimens therefrom also. Wallich met Rottler and his associates in 1812, and again in 1813. He called Rottler, 'a devoted mis-

Nathaniel Wallich (1786-1851)

sionary and ardent botanist'. This contact resulted in Rottler sending dried plants to Wallich.

After a year of his return from Mauritius to Bengal, Wallich practised at Calcutta and was appointed as an Assistant Surgeon on 10th May, 1814, under the British Medical Service of E.I.C. at Calcutta and subsequently, he became Superintendent of the Botanic Garden at Calcutta temporarily; later he was confirmed to the post in 1817 permanently. In 1818, he became a fellow of the Linnean Society and a Knight of Danneburg, received the degree of M.D. from the Medical College and University of Aberdeen in 1819. Subsequently he was elected a fellow of the Royal Asiatic Society and in 1821 was awarded an Honorary Doctorate by the University of Copenhagen. He became a surgeon on 5th May, 1826.

Earlier on February 2, 1814, Wallich first officially suggested for the establishment of a museum in his letter to the Council of the Asiatic Society of Bengal. He offered his services to the Society and proposed to present some of the collections lying at his disposal. The Society approved his proposal to set up the Museum at Calcutta and appointed Wallich to be the Honorary Curator and then alongwith William Lloyd Gibbons, he became the joint Superintendent of the Oriental Museum of the Asiatic Society (Burkill, 1965; Prasad, 1986). He took charge of the Museum on June 1814 and continued probably up to December 1814, because of his Government Service as Assistant Surgeon. But Wallich continued to direct and guide the work of the Museum up to the year 1819 at least. Thus, Wallich was not only a founder of the oldest Museum in India, now known as the Indian Museum, but he was one of the largest donors to the Museum at its very inception. Interesting botanical specimens and collections and unpublished manuscripts including those of Francis Hamilton and others, were handed over by him to the Society (Prain, 1905; Anon. 1986 b).

At the same time, Wallich, being one of the pioneer naturalists and field botanists, became interested in plants and their distribution in Asia and explored the virgin forests of Nepal, various parts of India, Malaysia, Burma and Assam successively. William Jack, a bright botanist and young Surgeon under the British East India Company Medical Service started correspondence from Dinapore with Wallich on 14th November, 1817 onwards (Anonymous, 1835) and visited the Botanic Garden at Calcutta in July, 1818 to meet Dr. N. Wallich. Jack came to India only at the age of eighteen (1813) and was received by Wallich with great kindness and warmth. At the recommendation of N. Wallich, Sir T. S. B. Raffles very willingly took Jack with him to Sumatra. On his way, Jack collected at Penang, about 130 plants of which 80 were considered new. He visited Calcutta again in 1819 to meet Wallich and returned at Bencoolen on 3rd March, 1820. Jack's letter to Wallich of 1st June, 1820, concerning the discovery of *Rafflesia* in Sumatra is interesting one and expresses his deep personal feelings to Wallich's families. The sad and premature death of Jack in 1822, moved Wallich deeply. His inclination towards Jack was expressed in his letters addressed to his father in London and Wallich assured him to erect a monument at Calcutta Garden in the memory of Jack. Chatterjee (1959) in the foot note of p. 452 remarked, "For some reason this monument was never erected". Das & Bhattacharyya (1984) however, recorded about the erection of the monument about 1.7 m high in the year 1844 near the large Palm House in the Calcutta Garden having inscriptions on its four sides with recollections of Jack. The publication was accompanied with a photograph of the same. Wallich attributed his genus, *Jackia* to Jack in Roxburgh's 'Flora Indica' (1824) and paid high tribute to the memory of W. Jack for his numerous valuable contributions. Jack sent to Wallich some of his collections, which were distributed by Wallich as from Penang but some of those were really collected from Sumatra (J. Str. Br. Roy. As. Soc. No. 25 : 164. 1894 : Ridley).

Wallich sent two gardners to Nepal in the year 1817 in order to collect plants for Calcutta Garden. They were working under the directives of Col. Edward Gardner, the British Resident at Nepal. In early 1820, E. Gardner sent a twig from the cultivated tea bush to Wallich (Deb, 1977). Wallich arranged his own visit to Nepal through Gardner and reached Katmandu on 21st December, 1820, but was under restricted movements in Nepal. Yet, through some of his native collectors, Wallich gathered considerable amount of attractive specimens from the sacred mountain, 'Gossain Than' and also from other areas. Wallich was able to send duplicates of his many Nepalese and other Indian plants as well as seeds to Edinburgh and other gardens in Europe, and to several distinguished scientists including J. E. Smith, J. Banks, A. B. Lambert, W. Roscoe and others from 1819 onwards. Wallich left Nepal in November 1821 and after well over a year, returned to Calcutta in early 1822. Afterwards, he attributed nearly 3,250 numbers of plants from Nepal in the Numerical List. He developed serious illness while in the Nepal Terai region and for recovery, reached Penang in August 22, 1822 and after a few collections, went to Singapore on 10th October, 1822, where he made extensive collections. Earlier on his way, Wallich visited the Straits of Malacca. He wrote previously to Sir T. S. B. Raffles to look into the possibility of establishing a botanical garden there and his recommendation was taken up for developing a botanical garden at Singapore (Hanitsch, 1913).

In the long years of Service between his provisional appointment and the year 1824, Wallich had ample time to investigate and study the Asian Flora, particularly of Nepal and India proper. Roxburgh, before his departure to England, left a completed copy of the manuscript of 'Flora Indica' to his friend Dr. W. Carey for its editing and publication. Carey also provisionally shared with Colebrooke the responsibility of superintending the Calcutta Garden until Buchanan's appointment. Roxburgh sent for his manuscript, descriptions of only a few species of plants from Ceylon and thereafter, nothing further was sent to Carey for incorporation into his manuscript. Carey decided to publish the Flora Indica with assistance of N. Wallich, with whom he had a close friendship. Wallich's additions and notes in 'Flora Indica' were indicated by the initials 'N.W. King (1895) concluded that in fact, the decision to include Wallich's novelties was the cause of the failure of the whole project. For Wallich's capacities for collecting were so far in excess of his leisure for description and classification, and he had to abandon the idea of carrying on his share of work for Roxburgh's 'Flora Indica'. The 'Flora Indica' vol. 1 (1820) contained only a few interpolations by Wallich and the vol. 2 (1824) contained 'a great many of additions of crowds of new species described by Wallich'. The publication of the Carey and Wallich's edition of Roxburgh's Flora Indica thereafter ended prematurely with the second volume. W. Carey in 1832, published subsequently in 3 volumes the entire manuscript of Roxburgh, as he left it and took no note of Wallich's additions of earlier two editions of 1820 and 1824 (King, 1895; Basak, 1973: Basak & Guha Bakshi, 1977).

Wallich's 'Tentamen Florae Napalensis Illustratae' was issued in two volumes (1824 & 1826) having descriptions of 25 coloured and 25 black & white lithographic plates, drawn by local artists. These plates were first fruits of the new art of Lithography in India.

In 1825, Wallich was required to submit a report to the Government on submontane timber forests of Western Hindustan (India), known as the kingdom of Oudh (Oude), province of Rohilcund (Rohilkund) and the valley of Deyra (Dehra Dun) and others. Wallich travelled up through the Ganga Plain as far as Hardwar and Sahasradhara in Dehra Dun district and areas covered by Royle earlier at Saharanpur and later, passed through Meerut, Delhi, Cawnpore and Lucknow (Bennett, *l.c.*; de Candolle & Smith, *l.c.*).

In the two succeeding years, 1826 and 1827, Wallich accompanied a Mission from the Government of India, led by J. Crawfurd to the Court of Ava, the ancient capital in upper Burma near present Mandalay and visited the mountains including the Maymyo plateau in the neighbourhood, and proceeded to the newly acquired territories on the coast of Martaban and Tenasserim. He made extensive collections in all these areas to report on the forest resources of respective regions (Crawfurd, 1834). He collected an extraordinary rich productive flora, both indigenous and foreign, including wild orchids, lilies and many important tree species from those areas.

Wallich arrived at Rangoon in August, 1826. In September, his party followed up the Irrawaddy river, haulting at several places *en route*, e.g., near petrol wells of Yenangeun (Yenangyaung) and reached Ava, located at the confluence of Irrawaddy and its tributary, the Mytinge river and spent around Ava and at Segaen (Sagaing). In the last week of November, Wallich went up the Mytinge river as far as Taong Dong, at the edge of the Shan state (1070 m above sea level) and collected from its environs between 24th and 27th November. His collections from this area were prolific, about 300-400 in numbers. In December, the mission went back down the Irrawaddy, reaching Rangoon on 17th January, 1827. The party then proceeded across the Gulf of Martaban to Amherst, Moulmein and Martaban. From Moulmein it went up the Attran (Ataran) river up to Siamese border. In February, Crawfurd returned back to Calcutta and Wallich was left alone at Amherst; later Wallich followed the course of the small river Chappedong. While returning to Martaban in March, he went up the Saluen (Salween) river and back, for reporting on teak forests of Burma (Burkill, *l.c.*, Smith & de Candolle *l.c.*).

The most interesting specimen that Wallich collected in the East was 'Thoka', a tree of Caesalpiniaceae (Leguminosae) with pendulous inflorescences of large showy flowers, having petals vermillion-red or salmon-pink with golden yellow spots, growing on Kogun Hill near Salween. Wallich named the plant under a new genus *'Amherstia'* (*A. nobilis* Wall.) after Lady Amherst, the wife of William Pit Amherst, later Governor General of India and her daughter Sarah Amherst. During their five years stay in India, they had shown themselves zealous of promoting the interest in Botany and other branches of Natural History (de Candolle & Smith, *l.c.*). Griffith (1847) attributed about 1,650 species from Tenasserim and Burmese region to the collections of Wallich.

Such was the extensive and amassing collections from the principal excursions in the Tropical Asia that Wallich decided himself to close his collection in the year 1827. The immense store of specimens, were liberally placed at his control and even thereafter, still accumulating from various parts of India such as Sylhet, Nepal, Kumaon and from Penang, through the zeal and enrichment by many of his collectors and private individuals. The total number of plants in the Garden, both indigenous and foreign, was increased largely and the herbarium contained over 8,000 species. Specimens were freely and frequently exchanged to the principal Herbaria of Europe and many novelties were published in various works of A. P. de Candolle, W. J. Hooker and Wallich himself and of many others (Bennett, *l.c.*). Wallich was elected as a fellow of the Royal Society in 1829.

By this time, Wallich's health again deteriorated much and owing to repeated attacks of illness, he was initially granted two years of leave from 1828 onwards to proceed to London with about 8,000 species of plants and many duplicates. His leave was further extended for another two years for the interest of the completion, sorting and distribution of his herbarium specimens. But even this leave was not enough for him to complete his task despite of the all the assistance he received from various sources (Wall. Num. List 1828-1832). Wallich was able to record up to the entry number 7683 in his Numerical List and he had to return to his duty at Calcutta in 1832. When Wallich was on leave in London, the French Botanist Jacquemont travelled through Bengal in the year 1829. Sir Charles Metcalfe, the then in-charge of Calcutta Garden, gave Jacquemont all facilities to study garden plants and library (Burkill, *l.c.* ; Basak, 1973).

Earlier, instead of converting his leave of absence into a period of leisure in London, Wallich immediately engaged himself in arranging, numbering and distributing his specimens which he carried with him together with those of others from India, lying in the House of the East India Company. He hired a working place and became a centre of attraction for his rich collection of eastern flora. Wallich material apart from his own, included collections by : (1) Robert Blinkworth & Kamroop or Kamrup (Kumaon, Sermore, Srinagar or Srinaghur in Garhwal, Kedernath and Badrinath), (2) M. R. Smith and Francis de Silva or Sylva (Silhet or Sylhet, Mt. Khasia and Pandua), (3) Henry Bruce (Chittagong, Silhet or Sylhet), (4) William Gomez (Tavoy and Tenasserim in Lower Burma), (5) G. Porter (Penang), (6) P. J. Noton and Hawtayne (Calicut, Nilgiri Hills and elsewhere), (7) J. F. Royle (Saharanpur, W. Himalaya : Sermore, Choor or Chaur, Nahan), (8) L. T. Leschenault (Nilgiri Hills), (9) T. S. B. Raffles and W. Jack (Penang, Singapore, Bengkulu or Bencoolen in Sumatra), (10) A. Mahmood (Chittagong, Prome), (11) Countess and Lady Sarah Amherst (Simla), (12) E. Gardner and R. Stuart (Nepal), (13) R. Colquhoun (Kumaon), (14) W. Carey (Bengal), (15) T. Hardwicke (N. W. Hindustan or N. W. India), (16) W. Moorcroft (Kabul, Srinagar, Laddakh), (17) G. Govan (Sermore in Garwhal and Saharanpur), (18) W. S. Webb and three brothers, Gerard Alexander, J. Gilbert and Patrick Gerard (Sermore, Srinagar in Garwhal and in other parts of W. Himalaya), (19) T. Horsfield (Java), (20) J. G. Koenig (Madras), (21) D. Scott (Manipur) and many others [C. Belanger : Armenia, Persia ; Beaumont Lady Diana : W. Farquar : Mt. Ophir in Johore, (Malacca)]. A full list of all collectors contributing to Wallich Numerical List is mentioned by Smith & Parsons (1970). In addition, a large number of cultivated plants from Calcutta Garden (H.B.C.) and from 24 other gardens, both private and public were included.

In December, 1828, as Wallich drew up 'A Numerical List of dried specimens. .. etc. ; he liberally distributed at the expense of the East India Company, a limited numbers of lithographed copies and consignments of his specimens amongst principal private Herbaria and all large public Herbaria and establishments throughout the world. Wallich initially prepared a list of nearly forty (40) receipients, both scientists and institutions for the distribution of his specimens and modified later, when needed. Deb's (1977) statement that Wallich "Numbered his specimens up to '8322' (?), sorted them into 8 sets and distributed to '20' centres of botanical research in different countries" requires further verification and confirmation. In December 1829, Wallich listed up to 2159 numbers, when he was permitted to incorporate the collections of others, lying in the East India Company's House (Wall. Num. List p. 60. 1829). In 1832, on the recommendation of Wallich, the main type set was presented to the Linnean Society of London together with all unsorted residues (LINN : Anonym., 1913). Jackson (1906) and Wallich's preface to 3rd vol. Pl. Asiat. Rar. supply full information of workers concerned with Wallich.

Wallich was assisted in his work at London by several leading and distinguished botanists of his time. Many of them treated various families as assorted by Wallich, alongwith collections of others lying at their disposal. Details of most of the families and respective workers were presented by de Candolle & Smith (*l.c.*). Some principal workers are as follows :

Out of many leading naturalists, who came to Wallich in Frith Street, London to examine his specimens and to assist him in sorting, Prof. J. Lindley worked on Orchidaceae, Rosaceae, Fagaceae, Oleaceae etc. His pupil, W. Griffith met Wallich and prepared drawings of three very intriguing plants for Wallich (Burkill, *l.c.* p. 37), before he left for India as an assistant surgeon of the Honourable East India Company. Between the years 1829 and 1832, Wallich completed his *magnum opus* the 'Plantae Asiaticae Rariores' in three volumes with descriptive text and 295 hand-coloured lithographic plates. A map showing the route of his travels (in pink) and of others in various colours, is attached at the end of the third volume. The 295 plates were selected out of 1,200 drawings made at Calcutta by local artists under his directives. The detail of Wallich's places of collection was described by Burkill (*l.c., passim*) and de Candolle & Smith (*l.c.*).

The then lawyer and later full-time botanist, George Bentham met Wallich in 1829 and a close contact between them was established. Bentham came forward to sort the collections and started his study on Wallich's Labiatae at Lindley's suggestion. Bentham prepared a synopsis of the family for Pl. Asiat. Rar. and took up Scrophulariaceae, Orobanchaceae, some Gesneraceae, Caryophyllaceae, Melastomataceae and a few other smaller groups. H. Falconer, after accepting his service in India, visited Wallich in 1829-1830, and afterwards succeeded Royle at Saharanpur. Wallich gratefully acknowledged Royle's assistance in the preparation of indices of Numerical List at the end. Robert Wight came to Wallich in 1831 with his two tons of collections from the peninsular India and wanted those to be incorporated and distributed in the same way as of Wallich. But. Wallich was already over burdened and he could not take any more additional specimens to deal with. Accordingly, Wight went to Edinburgh and separately issued a lithographic catalogue (1833-1837) of 144 pages listing 2403 species in the handwriting of Walker-Arnott. Some of these were enumerated in the 'Prodrumus Florae Peninsulae Orientalis' (Ranunculaceae to Dipsacaceae) by R. Wight and G. A. Walker-Arnott (1834) [Basak, 1981]. They worked on Malvales of Peninsular India on Wallich's specimens. An account of Wallich's, Royle's and Wight's Asclepiadaceae appeared in the same year (Wight, 1834).

Prof. R. Graham of Edinburgh sorted Wallich's Leguminosae specimens and provided only names in the Numerical List. The distinguished botanist, R. Brown of British Museum, offered to deal with Annonaceae, Capparaceae, Rubiaceae, Gramineae and a number of genera of Melastomataceae e.g. *Sonerila* etc. He contributed some descriptions to the Pl. Asiat. Rar. and provided with some names for the 'List'. He made oblique references to Wallich's Sterculiaceae and Gesneraceae (Cyrtandraceae) and other groups on the account of those material based on T. Horsfield's collections from Java. David Don, who worked on the Nepal Flora, referred to previously distributed specimens of Wallich and Francis Hamilton, and worked on a number of monocotyledonous groups e.g., Iridaceae, certain Liliaceae, Juncaceae and Gentianaceae in the Transactions of the Linnean Society of London (1837-1841). R. K. Greville of Edinburgh, elected to study cryptogams : algae and ferns ; but with W. Hooker in 'Icones Filicum' treated some Wallich's material. A. H. Haworth undertook the succulent group : Portulacaceae and Crassulaceae and described *Kalanchoe* in Pl. Asiat. Rar. J. D. Hooker ultimately studied Wallich's Crassulaceae in the Journal of the Linnean Society. W. Hooker elected to study Wallich's Musci, Filices etc. but he delt with ferns only. Wallich had 113 numbers of mosses for distribution in London (Burkill, *l.c.*). A. B. Lambert worked on the Coniferae, and contributed particularly on the genus *Pinus* (Miller, 1970). J. D. Prescott named certain Cyperaceae in Wallich's List. In his letter of 13th May 1830, Alphanose de Candolle described that Wallich while dealing with his specimens of Compositae, used to dispose at the top speed, nearly 60 species a day. This tempo could not be maintained however, throughout the work. Alphanose further wrote to his father in Geneva regarding Wallich's immense collections and his hard labour. All these indicate Wallich's knowledge, capabilities, his power of digestion, and his absorbing occupation and patience in working out the material lying at his disposal (cf. : Boulger, 1899 ; Deb, 1977 & others). Alphanose de Candolle helped Wallich in his task and ensured a generous share of first disposable duplicates for Geneva.

Apart from the British botanists involved in assisting Wallich, many continental botanists agreed to work on certain groups and were to receive duplicates (de Candolle, 1830). Foremost amongst them were de Candolles themselves at Geneva. Earlier, even before 1828, they received some material from Wallich. They got Araliaceae, Caprifoliaceae, Compositae, Cunoniaceae, Dipsacaceae, Loranthaceae, Saxifragaceae, Umbelliferae, Valerinaceae and Gentianaceae. Later, Wallich (September, 1830) added Polemoniaceae, Ebenaceae, Sapotaceae, Styraceae (including Symplocaceae), Pedaliaceae, and Aristolochiaceae. Alphanose de Candolle was to receive Campanulaceae, Myrsinaceae, Bignoniaceae, and Urticaceae. Various authors in Europe studied these families for de Candolles great 'Prodromus' (1824-1873) and included specimens distributed by Wallich.

Kunth worked on Gramineae mainly and helped Wallich in sorting during his stay in London for over two months. C.F.P. von Martius of Munich worked on Eriocaulaceae and Xyridaceae for the third volume of Pl. Asiat. Rar., and described a number of Wallich's Palms. Von Martius later agreed to work on Araceae, Hydrocharitaceae and the group 'Scitamineae' J. G. C. Lehmann of Hamburg became interested in *Potentilla*, Primulaceae, Boraginaceae and Hepaticae. But he only prepared a monographic account of *Potentilla* based on Wallich's specimens. Wallich already described a number of Primulaceae and rest was treated by J. E. Duby of Geneva. Prof. K. Meisner is associated with Polygonaceae in the third volume of Pl. Asiat. Rar. as well as Thymeleaceae ; accounts of both families appeared in the 'Prodromus' of de Candolles, along with Hernandiaceae, Lauraceae and Proteaceae.

The other visitor from Continent to Wallich was Prof. C. G. D. Nees von Esenbeck of Breslau (now Wroclaw in Poland). He presented an account of Indian Lauraceae, Acanthaceae for Pl. Asiat. Rar. and published on Indian Solanaceae. Nees also treated Cyperaceae of Wallich, Wight and

Nees in Wight's 'Contribution to the Botany of India' (1834). Later, he provided the names of Indian Gramineae to Steudel's publication. The Dutch botanist F. A. W. Miquel included Wallich's material in his *Systema Piperacearum.* From Poland (now Krementes in Ukranian S. S. R.), W. S. J. G. Besser worked on *Artimisia* for his *Tentamen de Abortanis* (1832).

A. T. Brongiart of Paris studied Wallich's Celastraceae and Rhamnaceae, based on specimens received from Wallich before 1826. J. Cambessedés of Paris decided to study Wallich's Hippocrateaceae, Sapindaceae, and Ternstroemiaceae (Theaceae). Prof. J. D. Choisy of Geneva undertook work on Guttiferae and Hypericaceae and Convolvulaceae. His account of Convolvulaceae was included in 'Prodromus' (9 : 1845) and a precursory treatment of oriental species of Convolvulaceae appeared in 1834; that on Guttiferae appeared in 1849. A. H. L. de Jussieu incorporated the results of his study on Wallich's Malpighiaceae in his Monograph of the family. The family Meliaceae of Wallich appeared in A. C. P. de Candolle's first volume of *Monographiae Phanerogamarum.* John Miers in his monograph published Wallich's Menispermaceae. N. J. Anderson of Sweden worked on Wallich's *Salix* specimens and presented an account of the genus for the second part of volume sixteen of 'Prodromus' (1868).

Thus, many leading botanists directly or indirectly became involved in the study of the material of the Great Herbarium of the Honourable East India Company. Different workers of the Flora of British India (1872-1896) treated various families and dealt with Wallich's collections. Although R. Brown particularly, and a few other British naturalists, disapproved the generosity of Wallich to foreign botanists, but the main desire of Wallich was to see that the entire fruits of his labour were made available to expert scientists around the world for their expeditious and authentic treatments.

Anon (1913), van Steenis-Kruseman (1950) and de Candolle & Smith (*l.c.*) while locating the centres of distribution of Wallich Herbarium stated that the main and the most complete set of Wallich specimens was presented to the Linnean Society of London (LINN.) in 1832 which was later transferred to the Kew Herbarium in July 1913 (K-W). It included also plants of B. Heyne, F. Hamilton, R. Wight, Roxburgh, Finlayson, J. G. Klein, J. Rottler, P. Russel and many other collectors of Wallich. Thus, at present, Wallich's types are mainly at K-W. Smith & Parsons (1970) in their prefatory notes on the Inter Documentation Company Microfische Projects on K-W, also enumerated : (a) Collectors who contributed to the East India Company's Herbarium with their abbreviations, their chief localities and Catalogue references on p.p. 1-2, (b) Other herbaria incorporated with collectors and chief localities in the East India Company's Herbarium and provenances of cultivated material in the Herbarium on p. 3, (c) Sites of lists of corrections, additions and indices in the Catalogue on p. 4, (d) Gazetteer with modern equivalents and positions including Microfische Catalogue on pp. 5-18, (e) List of missing and supplementary sheets in the East India Company's Herbarium on pp. 19-24 and (f) Note on the new (Bordered) labels on the East India Company's Herbarium sheets on p. 25 compiled by T. J. Parsons.

The Kew Herbarium is in possession of another less complete set obtained afterwards by J. D. Hooker and T. Thomson about the years 1850-1852, through the East India House and preserved in the general sequence Herbarium at Kew (K). The Herbarium of Calcutta (CAL) obtained in 1853-1855 (Chatterjee, 1948) through T. Thomson, a duplicate of the similar set at Kew, particularly so far as the Wallich's own collections are concerned. At present, the total number of specimens of Wallich's Numerical List as well as some specimens named by Wallich in his own pen after 1832 onwards now at Calcutta (CAL) is nearly 14, 285 which includes certain duplicates received by the Botanical Survey of India during 1958-1959 from Geneva (G) through the courtesy of the Swiss Government (Ann. Report Bot. Surv. India 1961-1962, p. 26 ; Basak, 1983 ; Nayar & Das, 1983). Those specimens received from Geneva (G) are now mixed up with previous deposits of Wallich material in CAL and are without any distinguishing note and/or labels. Other Herbaria possess sets in various degree of completeness of duplicates of some special groups such as : The British Museum Natural History (BM), Oxford including Herb. F. Druce (OXD), Cambridge (CGE), Berlin (B), Geneva (G : Herb. Geneva Univ., Herb., Boissier, de Candolle, De-lessert), The Royal Botanic Garden, Edinburgh (E), University of Dublin (TCD), Paris (P : also with Herb. Franqueville), Munich or Munchen (M), Leningrad (LE), Melbourne (MEL), Leiden (L), Turin or Toreno (Turiana) (TO), Vienna (W), Florence of Firenze (FI), Liverpool (LIV), Philadelphia (PH), Graz (GZU : Leitgeb Herb.) Prague or Praha (PR : the Charles University and the National Museum), a few in Dehra Dun (DD), Copenhagen (C), Lund (LD), University of Michigan (MICH), Brussles or Bruxelles (BR : Maurtius Herb.), Antwerp or Antwerpen (AWH : van Huerck Herb.), Rome (RO : Cesati Herb.), and of Nees (later Baron Zschok Herb.). Plants of Wallich were sold with Herb. Lambert ; Wallich's specimens were not purchased by BM, but acquired by Lemann and found also with Robert Graham in 1846. In 1852, Lemann's herbarium was presented to Cambridge. Gilmoure & Tutin (1933) states a large Wallich collection was at CGE, obtained partly from London (Steenis Kruseman, 1950 ; Miller, *l.c.*). In 1854, J. D. Hooker, described Wallich's distribution of his collections of 1832 as 'The most valuable contribution of its kind ever made to Science' and he himself put this precept in practice for distribution (Hooker, 1865 ; Anon. 1869-1870).

As Wallich's specimens and catalogue copies were distributed in a greater number to the all large Herbaria round the world and contained many new names proposed in collaboration with Bentham and others although without any descriptions, it was earlier taken as accepted that specimens named by Wallich in his Numerical List must have the priority, as if descriptions had been appended to entries in his Num. List (e.g. J. D. Hooker *et al.* Fl. Brit. India, 1872-1896). But the articles 29 and 32 of the International Code of Botanical Nomenclature (Voss *et al.* 1983), do not admit such priority that led to confusions earlier. Thus, most of Wallich's names of new species remain *nomina nuda* and invalid, even to this day, unless validated by Wallich himself in the Num. List with a reference to an earlier description or providing with short description, or in his other later works, or else taken up by other workers (Mabberley, 1977, 1980). But it is still sometimes noted that specimens which were only given bare names in the List are continued to be cited with the authority 'Wall.'

Moreover, the status of types of Wallichian specimens in various herbaria and personal collections is rather controversial and needs careful determination and consideration. Except some species, described by Wallich himself, many types based on Wallich's collections remain scattered in different Herbaria, where the respective author concerned, studied, annotated and published the *species nova*, based on Wallich material. C. B. Clarke re-arranged in 1881, the type set at LINN. (now K-W) according to their serial numbers of Numerical List and remarked in 1893 : "The worst of all plans is that adopted by Wallich... The numbers of Wallich as to the 'Type' sheets in his large paper collection, are cited sometimes in the Flora of British India, but the chief value of such citations is to direct a person in London (now at K-W), where to go to see the type of the species described by Hooker *et al.* It is not at all safe to name Wallich's sheets at Calcutta (CAL) from such citations. If it happens that several species (or varieties or forms) are mixed under the number, it is useless for citation". Clarke (1907) and others at various times examined critically a portion of the type set at LINN. (K-W), and reduced them in many cases ; and often, the names in Wallich Num. List are based on the references mentioned therein and this does not necessarily tally with specimens in K-W (from LINN.). These reductions are of practical utility to the in-charge of various other Herbaria where sets of Wallich were distributed. Even it has often been noted that different Wallichian sheets, issued under one and the same number, belong entirely to different species. The duplicates of residues of Wallich Herbarium were collected and distributed from the Kew Gardens for Calcutta (CAL), long before the publication of the Flora of British India was started (1872-1896) and therefore, those particularly at CAL were not seen by the authors of that work, unless they themselves personally examined and/or visited Calcutta (C. Jeffry, personal communication, 1981 ; Porter, 1980). It is not wise to consider the specimens in CAL-W, as isotype/type collection, and/or syntype without any critical examination. Thus, the attempt to locate and corroborate the types of species of Wallich and/or corelate them with species in CAL, described after 1872 in J. D. Hooker *et al.* the Flora of British India and also the introductory notes presented on the Herbarium of Wallich and on his Numerical List, both factual and numericals, including even subsequent series of additional corrections are often erroneous and lead to incorrect determinations and confusions as done by Panigrahi (1977), Deb (1977), Bhattacharya *et al.* (1982), Ghosh *et al.* (1980, 1982 a, b, 1983 a, b), Sikdar & Ghosh (1982) and Sikdar *et al.* (1980). All these obviously need correction and careful study (Anon, 1913, Chatterjee, 1948 b ; Ghosh, 1947 and 1948, de Candolle & Smith, *l.c.* & others).

It may also be mentioned here that the citations of Wallich specimens under East India Company's numbers (E.I.C. Nos.) instead of Wallich's reference are rather misleading ones (fide : Dan H. Nicolson : Smithsonian Contrib. 1 : 6 : 1969). From the Kew Herbarium, often duplicates of specimens of J. D. Hooker & Thomson, Griffith, Falconer, Helfer and also of R. Wight were distributed under different serial numbers of the East India Company and/or of Kew (Anon. 1869-1870 ; Hooker, 1865 ; Jackson, 1901 ; Anon. 1912). So it is better to cite or refer to Wallich specimens as 'Wall. List Number' as suggested by Majumdar & Banerjee (1976) or conventionally as, 'Wall. Cat. Number' with the citation of the respective collector's name, if available.

After his return from London to his duty as Superintendent of the Calcutta Garden in 1832, Wallich also continued his professional duties as professor of the Medical College, Calcutta. He enriched the Garden, both with native and exotic plants and rendered it useful by the transmission of Indian plants to gardens in U.K. and Europe. A severe cut in the financial support for the Garden by this time, retrogressed the activities of the nursery establishments and of others. J. D. Hooker referred to a report on the Calcutta Garden, where it was mentioned that about 1,89,932 plants were distributed to nearly 2,000 different gardens round the world, between January 1836 and December 1840. Furthermore, after his arrival at Calcutta, Wallich proceeded to rebuild the herbarium of the Garden. He faced much difficulties in the identification of his collections, even in many cases, his own species at

Calcutta, because of the absence of a well identified representative set. There is ample proof that Dr. Wallich could not be sure of one of his own plants (Griffith, 1843). Griffith also mentioned in the report (1st May 1843) of the Garden that Wallich distributed all Roxburgh's and Koenig's specimens to Europe alongwith his own collections (Wallich, Pl. Asiat. Rar. 3 : vii. 1832). Wallich again reminded his earlier request of October, 1832 to the Council of Linnean Society to transmit the best available set to the Calcutta Garden, out of the residues left behind with them. While distributing his duplicates previously, Wallich possibly never contemplated of the necessity of his returning to India, and hence, probably he omitted the name of the Calcutta Garden from the list as one of the receipients of his specimens. But, his request for his own specimens does not appear to have been executed even later. It was left to J. D. Hooker and T. Thomson to do what Wallich had left undone (Anon. 1912). Besides, when Wallich permanently returned to London in 1847, he practically did nothing to redress the injustice, and never utilized the opportunity of sending the specimens to CAL. Between October, 1847 and 10th (September-November) 1849, Wallich, assisted by George Bentham completed the distribution of the remainder of the East India Company's Herbarium and treated numbers '7684 to 9148' covering largely, Sapindaceae, Anacardiaceae (Terebinthaceae), Rubiaceae, Euphorbiaceae, Palmae and Gramineae at Bentham's residence 'Pontrilas', near Hereford (for the various dates of distribution of Wallich Material see Kuntze, 1891, translated into English by Anon. 1913 p. 260). Wallich on various pages of his Numerical List, acknowledged repeatedly the most obliging and valuable help of G. Bentham (Wall. Num. List pp. 283, 290 and 300).

Earlier, Wallich was asked to determine whether in India the Chinese tea-plant might be grown commercially and he was appointed to lead a scientific mission in order to examine and report on the possibility of developing tea plantation in Assam. Earlier, the presence of tea-plant in Assam was established in 1834 by Captain Charlton, who sent his collections to F. Jenkins (Anon. 1842). Even before, D. Scott from Manipur sent a leafy twig, said to be of a shrub, that yields tea. Wallich identified the same as another species of *Camellia* (?).

The other members of the party for Assam were William Griffith, a distinguished botanist and J. McClelland of Indian Medical Service and a geologist to act as a soil expert.

Finally on 31st August 1835, the party left Hooghly by boat to thread the Ganga delta and the jheels of Sylhet to Terraya Ghat and Brahmaputra valley and climbed the plateau of Assam. The relation between the party members although cordial in the beginning, gradually deteriorated rapidly. Griffith with great enthusiasm collected representatives of the flora, completely new to him. As Wallich was inadequately equipped with collecting material such as drying sheets etc., he directed to remove many specimens of Griffith from the press, except a few that seemed to him new. McClelland silently noticed it. A lasting difference of opinion thus developed between the two, because of the irritability of Wallich owing to his indisposition. As the party completed its visit to Jorhat area, Wallich returned in early 1836 to Calcutta while Griffith continued his collections in Assam and eastern India and returned to Calcutta in May, 1838. Both separately submitted their reports. The detailed account of 'The Assam delegation to enquire into the possibility of a tea industry in North-eastern India (Assam)' was presented by Burkill (*l.c., passim*).

In August 1842, Wallich's health began to give way considerably and he left India for the Cape of Good Hope in South Africa where he stayed for two years. But even under this condition of health, Wallich persued his favourite avocation by transmitting a considerable amount of South African plants to England. During the period of his absence from Calcutta in 1842, J. G. Voigt from Serampore and then, Griffith from Malacca (from December, 1842) took charge of the garden successively. Griffith's report (1843) on the Garden accused Wallich of neglecting it and blamed him for not having brought back a set of his material for the Calcutta Herbarium. In this respect Griffith was supported by McClelland actively (McClelland, 1841, 1848). In 1820, Wallich handed over 40 acres of land covering the teak plantation to the Lord Bishop of Calcutta, Dr. Middleton for Bishop's College, now known as the Bengal Engineering College, Sibpur. In 1836, 2 acres of land was given up by Wallich to the Agri.-Horticultural Society of India for experiments with crop plants, and it ultimately extended to 25 acres. The Society's garden was transferred in 1872 to its present site in Alipore. However, the Calcutta Garden even then, was considered as the most beautiful garden in the East and had contributed more useful and ornamental plants of tropics to the public and private gardens of the world than any other establishment before or since (Hooker, 1854). A major programme of reorganization was adopted by Griffith in order to introduce the Natural Orders of plants, by the time of Wallich's return from South Africa in August, 1844. Burkill (1965) discussed all these in detail. Long ardous labour in tropical climate steadily undermined Wallich's constitution, developing into chronic disease. The statement that 'Wallich goes somewhere every year' is at one time not untrue, as evidenced by the itinerary of his travels almost for every year and thus, implying neglect of his duties by absence (Burkill, *l.c.*). In 1845, R. Wight wrote that 'His botanical day is over' and Wallich also wrote to Sir W. Hooker that he wished that he could leave Calcutta as he had enough of India. The persisting ill health, indiscriminate destruction of the Garden by Griffith as also recorded by Hooker (1854), the continued criticism of Griffith/McClelland and a few others, made his stay at Calcutta really intolerable. On 8th April, 1846, after handing over the charge of the Garden temporarily to McClelland, Wallich left India for the last time in the steamer *Hindustan*. On his way to London, he spent the summer with his family at Caen in Normandy, where his health gradually began to improve. By November 1846, Wallich settled in a house in London, 5 Upper Gower Street. He died at the age of 69 on 28th April, 1854. He was buried at Kensal Green Cemetery on 3rd May, 1854 (Bennett, *l.c.*; de Candolle & Smith, *l.c.*). In the Calcutta Garden, near the junction of Collet and Kyd Avenues in the Division No. 4, 'some admirers of his genius and industry' erected an obelisk in the year 1882 with inscriptions 'In honour of Nathaniel Wallich M.D., F.R.S. for thirty years Superintendent of this Garden : A most distinguished Botanist and an indefati'c'able ('g') explorer OB/ITMDCCCLIV (1854)'

A group of conifers, *Pinus roxburghii* Sargent (syn. *P. longifolia* Roxb. ex Lambert), was grown around the same. The obelisk was made of highly polished decorative mosaic, approximately 5 m high with four steps at its base. N. Wallich has also been remembered by naming after him an avenue in the Indian Botanic Garden, Calcutta. The inscription on the grave of Wallich's wife, Jullia Maria, reads that she was born in September, 1797, married in May 1812 and died in August of the same year, at the age of about 15. The monument still stands in St. John's Church in Serampore where it was erected in August, 1813 (Dasgupta, 1986; Cf. Prasad, 1986). His son George Charles Wallich (1815 ?-1899) graduated M.D. from Edinburgh in 1836, became a licentiate of the Royal College of Surgeons, Edinburgh and joined the Indian Medical Service in 1838. He received medals for his services in the Sutlej and Punjab in 1842 and 1847; he was field-surgeon during the Santhal rebellion in 1855-1856. In 1860, he was attached to the survey of the Atlantic bottom and continued to study the marine biology. The Royal Society of London (Anon. 1872) recorded 22 papers contributed by G. C. Wallich, issued between the years 1844 and 1863. Thus, 'Wallich's link with India extended to the second generation through his equally important son' (Boulger, 1899; Prasad, 1986).

In his last few years, Wallich actively published articles and reports, translated into English various papers by others published from other languages, lectured at and attended meetings of various learned societies e.g. the Linnean Society, the Royal Society etc. He became the Vice-President of the Linnean Society in 1849 and all more important scientific bodies of Europe, America and the East enrolled him among their member. Earlier he received Silver Cross of Dannebrogsmund in 1829. He was appointed as a Gardner to the Duke of Devonshire of Chatswarth. Wallich was said by many, except Griffith and McClelland, 'as a man of warm affections, of ready wit and of pleasing manners, a most amusing companion, steady in his attachments and indefatigable in his exertions for the advancement of his favourite science'. The series of his earlier correspondence [1794 (?)-1829] [actually 1806-1831] with his friends and botanical institutions abroad were transferred to the Calcutta Herbarium from the Kew Gardens through India House, London in 1888 (Biswas, 1942; Das & Bhattacharyya, 1984). In addition to his comprehensive works already mentioned in the text, Wallich contributed between the years 1810 and 1854, mostly botanical papers, as listed by Anon. (1872 : 21 papers), Warming (1880-1881 : 23 papers) and Christensen (1924-1926 : 40 papers) and by others in parts. Some more are added here.

In recognition of his botanical persuit, the generic name *Wallichia* was commemorated by several authors. These are, (1) Roxburgh named the 'fishtail' palm as *Wallichia*-Roxb. Pl. Coasts of Coromandel....3 : 19. 1819. (Feb.-Mar. 1820) [Fam. Palmae, subfam. Corytoideae], (2) A. P. de Candolle named a member of Byttneriaceae (Sterculiaceae) as *Wallichia* A. P. DC. in Mem. Mus. Hist. Nat. 10 : 104. 1820 (non Roxb. 1820) and (3) Reinwardt and Blume named *Wallichia* Reinwardt ex Blume in Cat. Birtenzorg 11. 1823. (Rubiaceae) [non Roxb. 1820; = *Schillera* H.G.L. Reichenbach 1828]. Since the earliest validly published name of two or more homonyms is legitimate and acceptable (ICBN. 1983), the name *Wallichia* Roxb. stands to 'perpetuate the memory of this illustrious son of Denmark'

Out of various genera (nearly 61 ?) as attributed by J. D. Hooker *et al.* (1872-1896) in Fl. Brit. India, about 52 genera are mentioned here with references to their respective types from *Index Nominum Genericorum Plantarum* by Farr *et al.* (1979).

Amherstia Wall., Pl. Asiat. Rar. 1 : 1. Sept. 1829 (1830). Leguminosae/Caesalpinaceae.
Type : *A. nobilis* Wall.

Ancistrocladus Wall., Num. List 1052. 1829 (*nom. cons.*). Ancistrocladiaceae.

Type : *A. hamatus* (Vahl) Gilg in Engl. & Prantl. Nat. Pflanfam. 3 (6) : 276. 19th Feb. 1895 (*Wormia hamata* Vahl) Substitute name for *Wormia* Vahl 1810, non Rottboel, 1783.

Andrographis Wall. ex C.G.D. Nees in Wall., Pl. Asiat. 3 : 77. 116. 15th Aug. 1832. Acanthaceae.

Type : *A. paniculata* (Burmann f.) Wall. ex C.G.D. Nees (*Justicia paniculata* Burmann f.).

Anisadeniea Wall. ex C.F. Meisn. Pl. Vasc. Gen. 2 : 96. 8-14th April, 1838. Linaceae.
Type : *A. sexatilis* Wall. ex C.F. Meisn.

Anisochilus Wall. ex Benth. in Lindley, Edward's Bot. Reg. 15 : t. 1300. 1st Feb. 1830. Labiatae.
Type : *non designatus.*

Anneslea Wall. Pl. Asiat. Rar. 1: 5. Sept. 1829 (1830) (*nom. cons.*). Theaceae.
Type : *A. fragrans* Wall.

Argostemma Wall. in Roxb. Fl. Indica 2: 324. Mar. — June (?) 1824. Rubiaceae
Lecto-type : *A. sermentosum* Wall. (*sarmentosa*) Pfeiffer, 1 : 262. 1873.

Barclaya Wall. in Trans. Linn. Soc. London 15: 442. 1827. Nymphaeaceae.
Type : *B. longifolia* Wall. (It is a superfluous name for *Hydrostemma* Wall. based on the same type. Ref.: Mabberley in Taxon 31: 58. 1982).

Beaumontia Wall., Tent. Fl. Napal. 14. Jul. — Dec. 1824. Apocynaceae.
Type : *B. grandiflora* Wall.

Blepharistemma Wall. ex Benth. in Journ. Proc. Linn. Soc. Bot. 3: 73, 78. 1856. Rhizophoraceae.
Type : **B. corymbosum** Wall. ex Benth. (*nom. illeg.*) *Dryptopetalum membranaceum* Miquel.

Cardiopteris Wall. ex Blume in Rumphia 3: 205. Jan. 1849. = *Peripterygium* Hassk. 1843. (now known as *Peripterygium*) Cardiopteridaceae.
Type : *Non designatus.*

Codonopsis Wall. in Roxb. Fl. India 2: 103. Mar. — June (?) 1824. Compositae.
Type : *Non designatus.*

Colquhounia Wall. in Trans. Linn. Soc. London 13 : 608. 3-19th Dec. 1822. Labiatae.
Type : *C. coccinea* Wall.

Crawfurdia Wall., Tent. Fl. Napal. 63. Sept.-Dec. 1826. Gentianaceae.
Type : *Non designatus.*

Didymocarpus Wall., in Edinburgh Phil. Journ. 1 : 378. 1819 (*nom. cons.*). Gesneraceae.
Type : **D. aromaticus** Wall. ex Don., Prodr. Fl. Nepal. 123. 1st Feb. 1825 (*D. aromatica* : *Type cons.*).

Erismanthus Wall. ex J. Muell.-Arg. in Alp. de Candolle Prodr. 15 (2) : 1138. Aug. (*sero*) 1866. Euphorbiaceae.
Type : *E. obliqus* J. Muell.-Arg.

Gardnera Wall. in Roxb. Fl. Indica 2 : 318. Mar.-June. 1824. *Gardneria* Wall. in Roxb., Fl. Indica 1 : 400. 1820. Strychnaceae/Loganiaceae.
Type : *G. ovata* Wall.

Gastrochilus Wall., Pl. Asiat. Rar. 1 : 22. Sept. 1829 (non D. Don 1825). Zingiberaceae.
Type : *non designatus.*

Geniosporum Wall. ex Benth., Edward's Bot. Reg. 15 : t. 1300. 1st Feb. 1830. Labiatae.
Type : *G. strobiliferum* Wall. ex Benth. (*nom. illeg.*) (*Plectranthus colorata* D. Don E. P. Philips, Gen. S. African Pl. 651. 1951). [*G. coloratum* (D. Don) O. Kuntze, Rev. Gen. 2 : 517. 5th Nov. 1891].

Glossocarya Wall. ex W. Griffith in Calcutta J. Nat. Hist. 3 : 366. 1843. Verbenaceae.
Type : *G. mollis* N. Wallich ex W. Griffith.

Gomphandra Wall. ex J. Lindley, Nat. Syst. ed. 2. 439. July 1836. Icacinaceae.
Type (L.T.) : *G. tetrandra* (Wall. ex Roxb.) Sleumer in Notizbl. Berlin 15 : 238. 1940. (*Lasianthus tetrandra* Wall. ex Roxb.-Sleumer in Engl. & Prantl., Nat. Pflanzenfam. ed. 2. 20b : 364. 1942).

Hemiphragma Wall. in Trans. Linn. Soc. London 13 : 611. 3rd Dec.—19th Dec. 1822. Scrophulariaceae.
Type : *H. heterophyllum* Wall.

Herpetospermum Wall. ex J. D. Hooker in Benth. & J. D. Hooker Gen. Pl. 1 : 834. Sept. 1867. Cucurbitaceae.

Type : *H. caudigerum* Wall. ex Clarke in J. D. Hooker *et al.* Fl. Brit. India 2 : 613. May 1876, *nom. illeg. Bryonia pedunculosum* Seringe ; *H. pedunculosum* (Seringe) Baillon, Hist. Pl. 8 : 445. 1886.

Hitchenia Wall. in Trans. Med. Physc. Soc. Calcutta 7 : 215. 1835. Zingiberaceae.

Type : *H. glauca* Wall.

Holboellia Wall. Tent. Fl. Napal. 23. t. 16-17th July-Dec. 1824. Lardizabalaceae/Berberidaceae.

Type: *H. latifolia* Wall. (vide J. D. Hooker *et al.* Fl. Brit. India 1 : 108. May, 1872.).

Hydrostemma Wall. in Taylor & Phillips' Phil. Mag. n.s. 1 : 454. June, 1827. Nymphaeaceae.

Type : *H. longifolia* (Wall.) Mabberley in Taxon 1982. (Not included in Hooker's Fl. Brit. India ; the name *Barclaya* Wall. is its superfluous name).

Hymenocardia Wall. ex J. Lindley, Nat. Syst. ed. 2. 441 (July ?) 1836. Euphorbiaceae.

Type : *H. punctata* Wall. ex J. Lindley.

Hymenodictyon Wall. in Roxb. Fl. Indica 2 : 148. Mar.-June 1824. Rubiaceae.

Type : *Non designatus*

Hymenopogon Wall. in Roxb. Fl. Indica 2 : 156. Mar.-June 1824 (non Palisot de Beauv. 1816 = *Diphyscium* Mohr. 1803). Rubiaceae.

Type : *H. parasiticus* Wall.

Hymenopyramis Wall. ex W. Griffith in Calcutta Journ. Nat. Hist. 3 : 365. Oct. 1842. Verbenaceae.

Type : *H. brachiata* Wall. ex W. Griffith.

Jackia Wall. in Roxb. Fl. Indica 2 : 321 Mar.-June, 1824. (non *Jackia* Blume 1823 =*Jakkia* Blume 1823). Rubiaceae.

Type : *J. ornata* Wall.

Kayea Wall. in Pl. Asiat. Rar. 3 : 4. 10th Dec. 1831 (1832). Clusiaceae.

Type : *K. floribunda* Wall.

Kurrimia Wall. ex C. F. Meisn., Pl. Vasc. Gen. 1 : 67. 2 : 48. 21-27th May 1837. Celastraceae.

Type : *K. macrophylla* Wall. ex C. F. Meisn.

Leptodermis Wall. in Roxb. Fl. Indica 2 : 191. Mar.-June, 1824. Rubiaceae.

Type : *L. lanceolata* Wall.

Linostoma Wall. ex Endl., Gen. 331. Dec. 1837. Thymeleaceae.

Type : *L. decandrum* (Roxb.) Meisn. (Densksch. Bot. Ges. Regnsburgh 3 : 293. 1841) (*Nectandra decandra* Roxb.).

Melanorrhoea Wall., Pl. Asiat. Rar. 1 : 9. Sept. 1829 (1830). Anacardiaceae.

Type : *M. usitata* Wall.

Microtropis Wall. ex C. F. Meisn. Pl. Vasc. Gen. 1 : 68. 2 : 49. 27th Aug.-3rd Sept. 1837 (*nom. cons.*). Celastraceae.

Type : *M. discolor* (Wall.) C. F. Meisn. (*Cassine discolour* Wall.).

Monochilus Wall. ex Lindley, Gen. Sp. Orchid. Pl. 486. Sept. 1840. non. F. E. Fischer et C. A. Meyer, 1835 [=*Haplochilus* Endlicher 1841]. Orchidaceae.

Type : *Non designatus*

Neuropeltis Wall. in Roxb. Fl. Indica 2 : 43. Mar.-June, 1824. Convolvulaceae.

Type : *T racemosa* Wall.

Ornithochilus (Lindley) Wall. ex Benth. in Benth. & J. D. Hooker Gen. Pl. 3 : 478, 581. 14th April, 1883. Orchidaceae.

Type : *Aerides difforme* Wall. ex Lindley.

Pentaphragma Wall. ex G. Don. Gen. Hist. 3 : 731. 8-15th Nov. 1834. Asclepiadaceae/Pentaphragmaceae.

Type : *P. begonifolia* (Roxb.) Wall. ex G. Don (*Phyteuma begonifolia* Roxb.).

Pentasachme Wall. ex R. Wight, Contr. Bot. India 60. Dec. 1834. Asclepiadaceae.

Type : *P. caudatum* Wall. ex R. Wight.

Phytocrene Wall. Pl. Asiat. Rar. 3 : 11. 10th Dec. 1831 (*nom. cons.*). Icacinaceae.

Type : *P. gigantea* Wall. (*Type cons.*).

Platystemma Wall. Pl. Asiat. Rar. 2 : 41. 7th June 1831. Gesneriaceae.

Type : *P. violoides* Wall. (vide Alph. de Candolle, Prodr. 9 : 279. 1845. 1st Jan. 1845).

Putranjiva Wall. Tent. Fl. Napal. 61. Sept.-Dec. 1826. Euphorbiaceae.

Type : *P. roxburghii* Wall. (*Nagaeia putranjiva* Roxb.).

Raphistemma Wall. Pl. Asiat. Rar. 2 : 50. t. 163. 7th June, 1831. Asclepiadaceae.

Type : *R. pulchellum* (Roxb.) Wall. [*Asclepias pulchellus* Roxb.].

Roylea Wall. ex Benth., Edward's Bot. Reg. 15 : t. 1289. Dec. 1829. Labiatae.

Type : *R. elegans* Wall. er Benth.

Sarcopyramis Wall. Tent. Fl. Napal. 32. Jul.-Dec. 1824. Melastomataceae.

Type : *S. napalensis* Wall.

Thomsonia Wall. Pl. Asiat. Rar. 1 : 83. 1st Sept. 1830. Araceae.

Type : *T napalensis* Wall.

Trycyrtis Wall. Tent. Fl. Napal. 61. Sept.-Dec. 1826 (*nom. cons.*). Liliaceae.

Type : *T pilosa* Wall.

Triplostegia Wall. ex A. P. de Candolle Prodr. 4 : 642. Sept. (Sero) 1830. Valerinaceae.

Type : *T. glandulifera* Wall. ex A. P. de Candolle.

Urophyllum Jack ex Wall. in Roxb. Fl. Indica 2 : 184. Mar.-June, 1824. Rubiaceae.

Type : *U. viliosum* Jack ex Wall. (Pfeiffer, Nom. 2 : 1536. 1874).

Wightia Wall. Pl. Asiat. Rar. 1 : 71. Sept, 1830. Scrophulariaceae.

Type : *W. gigantea* Wall.

PUBLICATIONS OF NATHANIEL WALLICH

(Based on Warming 1880—1881 ; Christensen, 1924—1926 ; Anonymous, 1872 ; de Candolle & Smith, 1981 and some additions).

WALLICH, N. 1810

(Anonymt) 1810. Af et dansk Brev fra Serampore, dateret dam 10 Marts L. Eft. 1810 : 679-682 (Om indisker Planter) [Christensen, *l. c.*]

—— 1816

Descriptions of two new species of *Sarcolobus* and of some other Indian plants. *Asiat. Res.* 12 : 566-576. 4 pls.

—— 1819

Notice of the progress of Botanical Science in Bengal being the substance of a letter from Dr. Wallich... to Francis Hamilton, Edinburgh. *Phil. Journ.* 1 ; 376-380. [*n. v.*]

—— 1820 a

Descriptions of some rare Indian plants (Read on Feb. 11 & June 3, 1818). *Asiatic Res.* 13 : 369-415. 12 pls.

—— 1820 b

An account of a new species of a *Camellia* growing wild at Napal (Read on Dec. 12. 1818). *Ibid.* 13 : 428-432.

—— 1820 & 1824

Descriptions of plants more recently discovered by N. Wallich (Wallich's notes & additions under abbreviation N. W.). In W. Carey and N. Wallich ed. William Roxburgh's 'Flora Indca' vol. 1 : 1820 ; vol. 2 : 1824. Baptist Mission Press, Serampore.

—— 1822 a

Af et Brev fra Dr. N. Wallich, Directeur ved den botaniske i Calcutta, til Professore J. N. Hornemann dat. Katmandu in Napal d. 18 Juli 1821. *Tids. Naturv.* 1 : 257-264. (*n. v.*).

—— 1822 b

Description of two new genera of plants from Nepal (*Colquhonia* and *Hemiphragma*). *Trans. Linn. Soc. London* 13 : 608-614.

—— 1823

Aus einem Brief von Dr. N. Wallich, Direktor des botanischen Gartens in Calcutta an Prof. J. N. Hornemann dat. Katmandu in Napal den 18 Juli 1821. Flora 1823. 6(1): 65-75 ; *Froriep's Notizen* 4 : 113-116. 1823.

—— 1824 & 1826

Tentamen florae Napalensis Illustratae : Consisting of Botanical descriptions and lithographic figures of select Nipal plants. 64 pp. 50 pls. Fasc. 1 : 36 pp. 25 Col. pls. : 1824. Fasc. 2 : 28 pp. 25 uncolor pls. 1826. Asiatic Lithographic Company's Press, Serampore and Calcutta.

—— 1825 a

Description of the tree which produces the Nipal Camphor wood Sassafras bark (*Laurus glandulifera*) (Read on 15th March 1823). *Trans. Med. Physc. Soc. Calcutta* 1 : 45-54. pl, 1.

WALLICH, N. 1825 b

Extract from a letter from Dr. Wallich Superintendent of the Botanical Garden, Calcutta regarding the above grass (A fragrant grass : *Andropogon ivanrancura* ?) addressed to the Secretary of the Medical Board dt. 29th October, 1824. *Ibid.* 1 : 368-369.

—— 1827 a

Hydrostemma Wall. in Taylor & Philips' *Phil. Mag. n.s.* 1 : 454 (June 1827). [Mabberley, 1982].

—— 1827 b

Description of a new genus of plants belonging to the order Nymphaeaceae (*Barclaya* : a superfluous name of *Hydrostemma* Wall. based on the same type). *Trans. Linn. Soc. London* 15 : 442-448. t. 18.

—— 1828 a

Neue botanische Entdeckungen in Reiche der Birmanen. *Geiger's Mag. fur Pharm.* 23 : 3-5 (*n. v.* fide Warming, 1880-1881, p. 105).

—— 1828 b

Note sur les nouvelles de convertes botaniques faites dans les pays des Birmans. *Ann. des Sci.* 1 Ser. 14 : 111-112. [Warming, *l, c.* p. 106].

—— [and G. Bentham] 1828-1832 & 1847-1849

A numerical list of dried specimens of plants in the East India Company's Museum collected under the Superintendence of Dr. Wallich of the Botanic Garden at Calcutta. 306 pp. Numbers 1-7683 on pages 1-253. After no. 2159 on p. 60, a list of other E. I. C. herbaria incorporated is mentioned. Pages 257-268 indices including list of families and genera (1828-1832) ; nos. 7684-9148 on pages 269-305 (1847-1849) ; 305-306 *pp.* includes addenda & corrections. Lithographed from the manuscript copy by N. Wallich mainly and by G. Bentham. London and Pontrilas. Each specimen of only one gathering is given a current number ; while the same species is represented from different localities, separate designations are used : up to number 2220 these take the form of a subsidiary series (2220.2) of current numbers ; thereafter, minuscule letters (2233.b) are used and after the number 2248, capital letters (2249.B) are employed. [Lithograph copy in the library of the Botanic Garden, Botanical Survey of India, Calcutta. Many of the *nomina nuda* were validated by G. Don in Gener. Syst. 1831-1838, Mabberley, 1977 & & 1980 ; fide T. A. Sprgue 1925 a, b].

—— 1829

An account of the Nipal Ginseng (*Panax pseudoginseng* Wall.) (Read on Oct. 6, 1827). *Trans. Med. Physc. Soc. Calcutta* 4 : 115-120. [reprinted in Pharm. Centralblatt. Jahrg. 3 : 352-353. 1832 ; sec. 1832a].

—— 1829-1830, 1831 & 1832

Plantae Asiaticae Rariores ; or descriptions and figures of a select number of unpublished East Indian Plants. 3 vols. 295 pls. & map. vol. 1 : 1829-1830. pls. 1-100, x+6+84pp. vol. 2 : 1831. 101—200 pls. 4+86pp. vol. 3 : 1832. pls. 201—295. VIII+117 pp. Map of India sign. 296—300. Treuttel and Wirtz, Treuttel Jun. & Richter, London.

—— 1830 a

Account of new genus *Melanorrhoea* or the Burmese varnish tree ; with remarks of the genera to which it approaches. *Edinburgh Journ. Sci.* 2 : 66-75 ; [reprinted in *Ann. Sci. Nat. Bot.* 19 : 438-451. (under 1830 c)].

—— 1830 b

Uber das neue Geschlecht *Melanorrhoea* und den burmensichens Firniszbaum, mit Bemerkurgen uber die Geschlechter, denan er am meisten ahnlich ist. Archiv. d. ApothekerVereins 34 : 129-142.

—— 1830 c

Observations sur le nouveagenre *Melanorrhoea* ou Arbre a vernis dens Birmans, avee-des Remargues sur les genres dont ii se reapproche. *Ann. Sci. Nat. Bot.* 19 : 438-451.

—— [A. Aikin, Secretary, Soc. of Arts] 1831

A list of Indian woods, collected by N. Wallich MD, FRS. corresponding member of the Royal Institute of France and of the Academy of Sciences at Berlin & C. and of the Society of Arts of London, Superintendent of the Botanic Garden at Calcutta. *Trans. Soc. Arts Manuf., & Comm.* 48 : 439 & Seq. and issued as a pamphlet 1-43, London. Also reprinted by Aikin with introduction as "Catalogue of Indian woods collected by N. Wallich. etc." *Journ. Asiat. Soc. Bengal* 2 : 167-189. 1833. [Actually, the paper with an introductory note was published by A. Aikin. The greater portion, but by no means all (457 specimens), of the entries were made by Wallich. Pritzel (*l. c.*) ascribed the paper to Wallich and later, cited by other (Prain, 1905). Specimens collected by Maingay from Burma, Francis Hamilton from Gualpara in Assam also cited].

—— 1832 a

Ueber eine neue Ginseng-Wurzel (*Panax pseudoginseng* Wall.) Pharm. *Centralblatt. Jahrg.* 3: 352-358 (Pl. Asiat. Rar. 2 : 30-32. t. 137). Printed earlier in English in *Trans. Med. Physc. Soc. Calcutta* 4 : 115-120. 1829.

—— 1832 b

Ueber die *Gentiana chirata* Hamilt. (*Gentiana chirayita* Roxb. ex Flem.). *Pharm. Centralblatt. Jahrg.* 3 : 599-600 (*n. v.*). (Pl. Asiat. Rar. 3 : t. 252. 1832).

—— 1834

Notes on the botanical specimens from Mount Ophir. *Journ. Asiat. Soc. Bengal* 3 : 48.

—— 1835 a

Descriptions of some rare and curious plants (Read on 5th April, 1834). *Trans. Med. Phys. Soc. Calcutta* 7 : 215-234.

—— 1835 b

Letter addressed to J. Hutchinson, Secretary, Medical Board by N. Wallich, Superintendent of the Hon., Company's Botanic Garden, respecting the plant yielding the genuine Mudar (*Claotropis procera* ?). (Received on 31st May, 1833). *Ibid.* 7 : 458.

WALLICH, N. 1835 c

Die Entdeckung der Theestaude in Indien. *Allg. Gartenzeit.* 3 : 315-316. (*n. v.*).

—— 1835 d

Discovery of the genuine Tea plant in Upper Assam. *Gardners' Mag.* 1835 : 428.

—— 1836 a

Ueber die Theeflanzene in Assam (Transl.). *Froriep's Notizen* 50 : 340-341 (*n.v.*).

—— 1836 b

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—— 1836 c

Notes on *Cassia lanceolata* or the plant which yields the true senns leaves of the Calcutta bazars (presented on 6th Sept. 1834 with a note on Royle's Ill. p. 186-188 in p. 201. tab. 37 dt. 7th Nov., 1836). *Trans. Med. Phys. Soc. Calcutta* 8 : 160-171. Reprinted in *Madras Journ. Lit. & Sci.* 5 : 352-358. 1837 (see Christensen, *l. c.*).

—— 1837

On the American Sumach. *Trans. Agric. & Hort. Soc. India* 3 : 92-94 (1837 ?). (*n. v.* ; Christensen, *l. c.*).

—— 1838 a

A few brief notices on the state of population of Prince of Wales Island and of the price et which opium is retailed in the colony. *Trans. Agric. Hort. Soc. India* 1′ : 54-58.

—— 1838 b

On the *Gossypium acuminatum* of Dr. Roxburgh. *Trans. Agric. Soc. India* 2 : 149-150.

—— 1839 a

Remarks on Joomla Mountainr ice, Victoria wheat and the fibre of pineapple etc. *Ibid.* 3 : 82-95.

—— 1839 b (1840)

Table of contents of Dr. Francis (Buchanan) Hamilton's Statistical Surveys of seven, districts of Bengal. *Ibid* 3 : 158-165.

—— 1839 c (1840)

Observations on the Burmese and Munipoor Varnish tree *Melanorrhoea usitata* which has lately blossomed in the Honourable Company's Botanic Garden, Calcutta. *Journ. Asiat. Soc. Bengal* 8 : 70-71.

—— 1840 a

Report on the Hon'ble Company's Botanic Garden to G. A. Busby Esq. Secretary, to the Govt. of Bengal, Calcutta. G. H. Huttmann, Bengal Military Orphan Press, Calcutta.

[It includes list of growing perennial plants, tubers and bulbs distributed from and between 2nd Jan. 1836 and 30th Nov. 1840, placed under natural orders alphabetically arranged with appendix. Also known as Wallich's second '*List*' with 14 validly published names of species. (Mabberley, 1980 pp. 90-91)].

—— 1840 b

Report on the Botanic Garden of Calcutta. *Calcutta Journ. Nat. Hist.* 2 : 288-294. McClelland, 1841.

—— 1840-1843

Report on the Hon'ble Company's Botanic Garden, Calcutta (1840-1843). [In CAL, the first report dt. 1840 has no title page ; and it extends over 1836-1843. Nearly 1,700 species belonging to 690 genera which are placed under 150 natural families. Among them are many of the most beautiful and ornamental productions, both natives and foreign. The influx of plants had been derived from all sources and many were sent as contributions. Europe, America, the Cape, Baurlon and Mauritius, shores of Mediterranean, New Holland and frequently to the Straits and Eastern Peninsula. Assortments received for this garden were most successful : e.g. from Mr. Blinkworth of Tea plantation in Kumaon, Mr. Hodgson, the resident at the court of Katmandu, Captain Jenkins, Governor General's agent in Assam, Mr. Inglis, assistant to the political agent on the Khaseea Hills, Capt. Vicary of the 2nd European Regiment from New Holland and plants raised at Gorakhpur Gardens from seeds, imported by himself also grew well. At page 103, list of plants from 6th Mar., 1936 to 20th Nov. 1840].

—— 1841

Right of discovery and publication in the tea plant of Assam. *Proc. Agric. Soc. India* 1841 (July) : 9-40, 1841. (*n. v.*)

—— 1841-1852

Correspondence with Sir William Jackson Hooker Housed at Kew ; [Wallich's earlier correspondences (1796, actually 1806-1831) are at Calcutta] containing 23 volumes 1817-1848, including some botanical papers.

—— 1842 a

Effects of the late Gale at the Botanic Garden, Calcutta, *Journ. Agric. Hort. Soc. India* 1:3-7. With 'statements of trees and shrubs of the Garden at Calcutta injured or destroyed during the gale on June 3, 1842 *ibid.* 8-18 in all trees and shrubs more or less damaged 1186 ; blown down and completely ruined, 303 trees.

—— 1842 b

On the Dowree plant and *Olibanum* tree. *Proc. Agric. Hort. Soc. India* 1 : 290.

—— 1842 c

The *Pueraria tuberosa*, a troublesome plant in the Chittagong district. *Proc. Agric. Soc. India* 1842 : 3 : 32-36.

—— 1842 d

Dried Plantains as a useful confection. *Trans. Agric. Hort. Soc. India* 8 : 58-59.

—— 1845

Notice regarding the American Sumach, with a recommendation for its culture in India. *Journ. Agric. Soc. India* 4(2) : 26-27.

—— 1850

Remarks on the Flora of the Nicobar Island, translated from the narrative of voyage round the world of Corvetti Galathea. *Hook. Journ. Bot.* 2 : 1.

WALLICH, N. 1851

English Translation of 'Dag Konigliche Herbarium Zu Munchen, Munehen 1850 by Martius K. Fr. PH. Von' in Hook. London *Journ. Bot. & Kew Gard. Misc.* 3 : 65-74, 102-111.

—— 1852

Wachistzhum des Bamburohres. Florieps Tagesberichte 24.

—— 1853 a

A brief notice concerning the Agricultural and Horticultural Society of India. *Hooker's Journ. Bot.* 5 : 137-139.

—— 1853 b

Initiary attempt to define the species of *Hedychium* and settle their synonymy. *Ibid.* 5 : 321-329 ; 367-377.

—— 1854

Some account of the genus *Hedychium* with a few alterations. *Journ. Hort. Soc.* 9 : 11-27.

—— 1855 a

A translation from the Swedish of 'Almanac no es for the year 1735 by Charles von Linné (Read on 5th Dec. 1845) *Proc. Linn. Soc. London* 2 : 5.

—— 1855 b

Notice concerning Linnaeus *Iter Dalecachcum* extract from a letter of Mr. Charles Hartman to the Secretary of the Royal Academy of Sciences of Stockholm in which he gives a report of examination of the collections and manuscripts of Linnaeus in possession of the Linnean Society of London and printed in the Academy's Proceedings at the meetings of 12th Sept. 1849 (being no. 7 of the 6th year, p. 185). Translated from Swedish by N. Wallich M. et Phil. D., V. P. L. S. by N. Wallich (Read on 4th Feb. 1951). *Proc. Linn. Soc. London* 2 : 114.

—— 1855 c

Some extracts from his 'Notes on the germination of 1643 species of plants'—details of his deductions to be given later. (Read on 4th March, 1851). *Ibid.* 2 : 127.

—— 1857

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ANONYMOUS 1833

Indian Botany : Proceedings *of the Linnean Society*, June 5. (Presentation of the Herbarium of East India Company as arranged by N. Wallich to Linnean Society of East India is described briefly and also on a set of Dr. Royle's collections). *Journ. Asiat. Soc. Bengal* 2 : 156-157.

—— 1835

Descriptions of Malayan Plants by William Jack with a brief memoir of the Author and extracts from his correspondence. *Hook. Comp. Bot. Mag.* 1 : 121-147. [Most of the letters exhibit the cordial and warm relation between Jack and Wallich].

—— 1842

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—— 1843

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—— 1869-1870

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—— 1986 a

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—— 1986 b

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—— 1986 c

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Nos. 1-2153 : 1829 ; nos. 2154-2603 : 1830 ; nos. 2604-4877 : 1831 ; 4879-6224 : issued between 1831-1832, but appears not received by de Candolles : nos. 6225-7683 : 1832. Pfeiffer (*Nom.* 1873 & 1874) quoted Wallich's specimens with inconsistent dates of issue and contradictory numbers.

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